THE VETERINARY RECORD

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Medical *versus* Veterinary.

As this title may suggest that we are about to institute some comparisons which may be odious, it is well to say at once that nothing is further from our object. "Defence not defiance" is our motto. No class is better able to appreciate the work of medical men than the veterinarian, and none is more ready to acknowledge the contribution made by practitioners of medicine to human happiness and progress. But every calling has its limits, and the profession of medicine is no exception. As guardians of public health the medical profession is *facile princeps*, and its ruling on matters directly concerned with the physiology or pathology of human beings may safely be accepted as the best obtainable. The subject of public health is, however, far wider than what is embraced in the section of human pathology. The sanitary condition of towns and houses, the supply of air, food and water, and many other conditions affecting the health of the people are subjects that no single calling can master. Architects and engineers must give their assistance and other professions must supply the special information which experience and training have afforded them if a community desire the greatest possible protection to life and health.

There are many conditions affecting the public health directly traceable to the existence of animals. Milk and flesh form no inconsiderable item in our food supply. Various animal products are essential to human comfort and health. Some diseases of animals are the sole cause of certain diseases in man, and some diseases of man are transmissible to animals. There are, too, specific maladies of the human being which have been asserted to arise from animals which present no analogous disease.

These facts are sufficient to show how necessary it is that the experience of the veterinarian should be utilised in any well considered scheme for the protection of public health. As a rule the special knowledge possessed by the veterinarian has been sought by authorities entrusted with the care of human health. In every country except Great Britain the inspection of animals slaughtered for the food of man is entrusted solely to veterinarians. In most of our large towns and rural districts a veterinarian is entrusted with the inspection of animals suffering from such diseases as glanders, rabies and anthrax—all of which are transmissible to man, and none of which are recognised in animals with precision by any other class of the community. One other disease of animals is now engaging the attention of sanitarians and legislators which will assuredly be soon recognised as dangerous to public health. This insidious malady—tuberculosis—is well-known to veterinarians, who certainly recognise it clinically and on post-mortem examination as no other profession can do. If public health has to be protected properly the efforts of the Medical Officer of Health must be supplemented by the assistance of the veterinary officer.

All this seems so clear to anyone whose intelligence is not perverted by his interests that our insistance might seem superfluous. We had thought it was beyond dispute and that it had reached the stage of general acceptance, but we are surprised to find that in Scotland—the country pre-eminent for common sense and logical consistency—an effort is being made to ignore the simple facts.

There is now before Parliament a Public Health (Scotland) Bill. In the most interesting and cogent letter we publish from Mr. McGeoch it will be seen how an attempt is being made by the Corporation of Glasgow to alter this Bill in such a way that a medical officer shall be entrusted with the diagnosis of disease in animals, and the veterinary surgeon prevented from taking any part in the matter. Section 25 of the Bill provides that when a medical officer has evidence that an outbreak of disease in man is traceable to the milk supply "such medical officer shall, if authorised by a magistrate, have power to inspect the dairy, *and if accompanied by a veterinary inspector or some other properly qualified veterinary surgeon, to inspect the animals therein*, and if on such inspection the medical officer is satisfied that such disease is caused by the milk he shall report to the local authority, and his report shall be accompanied by any report furnished to him by the veterinary surgeon."

It would be difficult to invent any proceeding more likely to afford correct information to the local authority. Mr. McGeoch, however, tells us that a meeting of medical officers and sanitary inspectors has been held to obtain the assistance of the Corporation of Glasgow in petitioning Parliament to have the Veterinarian excluded from the Bill. The Corporation has memorialised Parliament and suggested various amendments, including the removal of the Veterinarian from all participation in the recognition of disease in animals. Fortunately reasons are given for this move, the memorial says:—

> "The proposal in the bill to make the inspection of cattle by medical officers contingent on the presence of a veterinary surgeon seems to have no justification either in necessity or expediency. Medical men first pointed out the special diseased conditions in cows, which entail grave risk to the consumers of their milk, and it would be difficult, if not impossible, for the medical officers of many counties in Scotland to find 'a properly qualified veterinary surgeon.' The clause ought merely to enable Local Authorities to order inspection by a veterinary surgeon if they are so advised."

The justification for the clause as it stands is two-fold—first, no medical officer is as competent as a veterinary surgeon to recognise disease in animals: second—quite a number of medical officers have in times past diagnosed disease which did not exist, and thus not only diverted attention from the real cause of danger but caused great trouble and loss to the owners of animals. The statement that "medical men first pointed out the special diseased conditions in cows" which cause disease in man, is proof that the authors of this statement are still holding to an exploded fallacy which the majority of the medical profession have long since abandoned.

It is for us individually and collectively to now leave no stone unturned to prevent this flagrant attempt to ignore our position.

CASES AND ARTICLES.

NOTES ON MALLEIN.

By W. Hunting, F.R.C.V.S.

The indications given by an injection of mallein are two—a swelling at the point of injection and a rise of temperature disclosed by the thermometer. A well marked double reaction consisting of a rise of 4 or 5 degs. of temperature and a local swelling over three inches in diameter may safely be accepted as evidence that the animal tested is glandered.

The Local Swelling. The size of the swelling is of value, as some healthy horses show an enlargement at the part where mallein has been injected as big as one-third of an orange. It is possible also as the result of puncturing an infected skin or as the effect of using a dirty syringe to get a large swelling. In one case I have seen an extensive swelling followed by an abscess. The horse was recovering from strangles and probably some strangle matter had found a lodgment on the neck. The tendency of the swelling resulting from an injection into the neck is to gravitate, and a small swelling of only three inches in diameter may soon increase downwards till it measures from top to bottom seven or eight inches. This measurement is useless as an indication, and the diameter should only be taken transversely—from before, backwards. Quite as valuable as the size of the swelling is its sensitiveness. A swelling which is very painful is specially indicative of glanders.

The neck is certainly the best place at which to inject—about the region of the fourth cervical vertebra. The bony column throws up the swelling and makes it all visible on the surface. If the injection be made through the skin of the flank no surface swelling is seen but it may be felt in the loose tissues.

Rise of Temperature. I have never seen the temperature rise over 106 degs. In a healthy horse there may be no rise, and there may be one of two degrees. In a glandered horse if the temperature before injection be 100 degs., there will usually be a rise to 105 in twenty-four hours. I do not consider it necessary to take any intermediary temperatures between the time of injection and the lapse of twenty-four hours. Should the rise have reached its maximum at the sixteenth hour it will not have subsided more than a fraction by the twenty-fourth. To have to take the temperatures of a number of horses two or three times in the twenty-four hours is most inconvenient, and the trouble has caused some men to decline to repeat it. There is no necessity for more than two visits—one to inject and one to observe the reaction. In some cases a difficulty arises. When the temperature of a horse is 104, as it often is in glanders, no rise of temperature follows the use of mallein. In fact my experience is that in all glandered horses where the temperature exceeds 103·5 there is in the twenty-four hours following injection of mallein a very rapid fall, as though the reagent had a good therapeutic effect. In these cases of high temperature we must either wait till it subsides or trust entirely to the local swelling at the point of injection. In most cases the local swelling by its size and painfulness is indicative enough. Of course if other clinical signs of disease are evident the local swelling is sufficient to warrant a decision.

Post-mortem Changes. My experience does not include any changes of the internal organs as the result of injecting mallein under the skin of a healthy horse. When the horse is glandered mallein gives rise to some very definite changes which I consider quite as diagnostic as the reactions noticed during life. These changes are found on the heart and lungs. Under the pleura are patches of ecchymosis—small spots, lines and irregular splashes. Under the pericardium and sometimes under the endocardium are similar ecchymosed patches. Not unfrequently those on the outside of the heart are as large as a half-crown piece.

Proportion of reaction to disease. In some cases of glanders the reaction to mallein shown during life is very much more violent than in others. In some the local swelling is enormous, and the rise of temperature to 105 or 106 degs. is accompanied by "blowing" and loss of appetite. In others no constitutional disturbance is noticeable more than what is shown by a thermometer, and the swelling is moderate. It would not be unnatural to assume that the violence of the reaction is in direct proportion to the extent of the disease. I am unable to find any relation whatever between the intensity of the reaction and the stage or extent of disease. The reaction may be only sufficiently indicative and a post-mortem reveal a pair of lungs full of glanderous nodules. The reaction may be violent and on post-mortem examination only the greatest care enables you to find two or three nodules.

This is important when considering the regulations for stamping out glanders. We know that some cases spontaneously recover, and we conclude that when only one or two small nodules exist in a lung that such a case might have recovered or at least have done many months work without risk if properly stabled. Slaughter on nothing more than the indications of mallein should not be employed except on payment of a liberal compensation to the owner of the horse.

Effect of repeated injections. When mallein is injected into a glandered horse at intervals of a week, or similar short periods, the reaction is less marked each time. I have not seen more than three repetitions so cannot say when no reaction would be reached. I incline to think that so long as active bacilli existed in the system reaction would be evidenced.

Generalization of glanders by mallein. It has been said that mallein was dangerous because it might cause a quiescent, local infection to become generalised. My experience leads me to think this never happens. In no case have I ever seen any sign that mallein caused generalisation of glanders. I have seen it cause diuresis, and give rise to violent general disturbance, but these conditions always settled down again in a few days without the development of any additional symptom of glanders.

Curative Action. Has mallein any curative action on glanders? I believe it has. I have seen cases which reacted to mallein work for months, improve in appearance and show no sign of being glandered.

When killed nodules existed in the lungs. One of these horses was re-injected with mallein before being killed, thirteen months after the first injection. Both lungs contained glanderous nodules, but the nodules were unusally hard and large portions of lung had undergone a fibroid change rendering them not easily cut with a scalpel. A few ecchymosed spots under the pleura suggested to me that some active bacilli still existed. I should think that as a curative agent mallein should be injected at intervals of about a month and continued for a year or more.

To Professor McFadyean is due the credit for having placed mallein in this country on the sure foundation it now occupies. To him I am indebted for nearly all the mallein I have used—an indebtedness greatly enhanced by the fact that the whole supply has been gratuitous.

PECULIAR CASE OF RABIES.

By W. J. Wagstaffe, M.R.C.V.S.

The following notes of a case of rabies I imagine to be without a parallel in the records of that disease, and shall be very pleased to hear the comments of any of your readers upon it.

On the 13th of September last I made a post-mortem examination of a stray dog that had been shot, on suspicion of being affected with rabies, and as a result of the examination I certified that the dog had suffered from that disease.

The evidence post-mortem, showed an absence of food in the stomach and intestines, and the presence in the stomach of a considerable quantity of hair, straw, bits of wood and gravel—congestion of the fauces and upper part of trachea etc. The brain was not examined, as the dog had been shot in the head and the parts were in a pulped condition. The mouth and tongue were considerably swollen and presented a very dirty appearance, the mouth itself containing some amount of gravel. The carcase generally showed an extremely emaciated condition, the face appearing very drawn and wrinkled—the feet pads were much worn and lacerated.

On the following day I examined some eight cows which the dog had been seen to attack, and which were reported to have been bitten. In four or five of these animals I found some slight abrasions of the skin, in no case sufficiently serious to be described as a wound, but having the appearance of scratches as though they might have been grazed by a dog's teeth in his attempts to bite. These cows were regarded as possibly inoculated with rabid matter, and were confined to the building and kept under observation for some six months.

On the 25th Janury I made a post-mortem examination of a calf, aged about one month, born of one of the suspected cows, that had died somewhat suddenly after exhibiting symptoms suspicious of rabies. This calf was being fed up for the butcher, and in fact at the time of death was in a very fat condition. All the organs appeared healthy, and I did not attach any great importance to this case, as I believed it to have died from some kind of convulsive fit, brought about by over feeding.

On March 5th I made a post-mortem examination of another calf, about the same age as the former, also the progeny of one of the bitten cows, that had died under circumstances similar to the above. I was unable to find any symptoms of disease in this calf. As I had not had an opportunity of seeing either of these calves previous to death, I thought it expedient that some further investigation should be made. The brain and medulla were forwarded to the Brown Institute, and as a result of the enquiries there the case has recently been declared to have been one of rabies.

The cows that were bitten, including the mothers of these calves, so far present no appearances of the disease, and the case is of special interest from the fact that while the cows are still apparently in perfect health, two calves that were born of these cows some months after the infliction of the bite have died of the disease.

I believe the above case to be unique, but send you the facts such as they are.

[Is it not possible these two calves had been bitten by a rabid dog and that the infection was thus directly communicated, and not transmitted through a healthy mother. —Ed.]

THE EDUCATIONAL TEST.

By E. E. Martin, Vety.-Lieut., A.V.D.
Professor Lahore Vety. College.

I have been rather surprised lately to find that the subject of the educational test has again cropped up in the professional papers. I thought this had been settled some time ago by the Council deciding that the standard should be nothing short of what was required by the medical schools. This seemed perfectly just and fair, for everyone will admit I think that our profession is quite as difficult an one to practice as the medical, and a student would be unwise to embark on his career without a fair preliminary education.

I thought it might possibly interest some to find out what is being done on this question in some of the veterinary schools in India, and with that object have penned the following notes.

The Lahore Veterinary College is an institution for the education of purely native students. Intending students, other than military ones sent by the native cavalry regiments, have before they can enter to produce certificates of having passed either the Middle School examination or the Punjab University matriculation. Of these the former is the simpler. The subjects that have been taken up in this examination are as follows :—

1. English or their own language, including writing and dictation.
2. Arithmetic up to decimals and cube roots.
3. Mensuration.
4. History.
5. Geography.
6. Euclid. Books I. to IV.
7. Algebra to Quadratic Equations.
8. One of the following languages: Sanskrit, Arabic, Persian, Hindi, or Urdu.

Besides these subjects which are compulsory there are two or three voluntary subjects such as elementary science and sanitation.

All the above may be taken up in English or in the vernacular.

I enclose copies of the papers set in some of the subjects last year in case you think them of sufficient interest to print.

It must be observed that the Lahore Veterinary College does not aim at turning out its students as veterinary surgeons but only as veterinary assistants, that is men in the subordinate position who will act as assistants under the control and orders of the veterinary officers in the army and civil departments. It seems not unnatural to suggest that the students at the home colleges, a certain percentage of whom in the ordinary course of events will become officers in the Army and Civil Veterinary Departments and will have the supervision and control of these men, should be asked to pass an educational test correspondingly difficult relative to their positions.

[*Compulsory.*]

S.M. 1895.

ARITHMETIC.—Paper (*a*).

Maximum Marks: 90.

I. What decimal added to the sum of 1, 7-24ths, 5-8ths, and 13-36ths will make the sum total equal to 3? (10)

II. Find the difference between 6½ half-guineas and £3,525; and reduce the result to the decimal of a crown. (10)

III. Extract the square root of 3-5th to five places of decimals. (10)

IV. Find by practice the value of 7 cwt. 2 qrs. 15½ lbs. at £3 0s. 7d. a cwt. (12)

V. Find at what rate simple interest a sum of money would amount in two years to the same as at 4 per cent. compound interest. (16)

VI. A dealer buys 80 tons of coals, and after selling them again at 1s. 6d. per sack finds that he has gained £4. Had he sold them at 1s. 4d. per sack he would have lost £6. Find the cost price per ton, and the weight of a sack of coals. (16)

VII. Find the respective times between seven and eight o'clock when the hour and minute hands of a watch are (1) exactly opposite to each other, and (2) at right angles to each other. (16)

VETERINARY SOCIETIES.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held at the Royal Hotel, Southampton, on Tuesday, April 2nd, the members present being T. B. Goodall (president), Messrs. J. W. Barford, J. T. King, J. T. Burden, E. W. Baker, C. Carter, G. J. Gould, J. F. Simpson (President R.C.V.S.), and C. Pack (hon. sec)

Apologies were read from several members and friends regretting their inability to attend.

Morbid Specimens.

The President showed the lower jaw of a mare with irregular and loose teeth. The animal was eleven years of age and had been in poor condition since about three years of age. He had advised her being destroyed, and had secured the head. Some of the teeth were quite loose, and the alveoli also contained ingesta which had apparently kept up a continual irritation of the part. He also exhibited the lower jaw of a 30 year old horse in which the teeth appeared to have been worn almost entirely through the crown, thus showing that a set of teeth under ordinary conditions would about last the lifetime of a horse, providing he were not carried off by disease, and the teeth themselves remained in a sound condition.

The minutes of the last meeting having been read and signed, the meeting proceeded to the

Election of Officers for the Ensuing Year.

On the proposition of Mr. E. W. Baker, seconded by Mr. J. W. Barford, Mr. J. T. King was unanimously elected president.

Mr. King having thanked the members for the honour paid him, Mr. Goodall vacated the chair in favour of Mr. King.

The vice-presidents elected were Messrs. J. F. Simpson, J. W. Barford, E. W. Baker and C. Carter.

Mr. Pack was re-elected to the offices of secretary and treasurer.

The Exemption of Veterinary Surgeons from Serving upon Juries.

A letter was read from the Secretary of the R.C.V.S. containing the reply of the Council to a resolution made at the last meeting of the Association asking the Council to exert their influence to obtain the exemption of veterinary surgeons from serving upon juries, and to take steps for the revision of the scale of fees paid to veterinary surgeons when giving evidence in criminal cases, so that they may be placed on a similar footing to solicitors and medical men.

The letter was to the effect that the Council could not see their way to do anything in the matter, and suggested that the better way would be to appeal to the Local Parliamentary representatives.

After discussing the letter it was resolved that the secretary again write "That the Association expresses disappointment at the answer received and desires the Council to again give the whole matter their earnest consideration."

Grunting in Horses.

The circular letter from the Lincolnshire Veterinary Medical Association asking for a general opinion of the members on the above subject was now read, and after most of the members present had expressed their opinion of the matter it was decided that a reply be sent in the following terms:—"That in the opinion of this meeting 'grunting' in horses does not necessarily constitute unsoundness."

Support to candidates for Council was the next item on the agenda, and it was decided that the hearty support of the members should be accorded Mr. Simpson at the forthcoming election of Councilmen, and that the Secretary write the members of the Association not present that day informing them of this.

IODINE AND ITS COMPOUNDS.

By E. W. Baker, M.R.C.V.S.

Mr. President and Gentlemen,—At the last meeting of the Southern Counties Veterinary Medical Society the advisability of continuing to hold our meetings as before or amalgamating with the Royal Counties Veterinary Medical Society was discussed. Feeling that it was not advisable to let our own Society die an unnatural death I suggested each member in turn should introduce a subject for discussion, and promised I would be the first to do so. Such is my excuse for bringing forward

my paper to-day, and in doing so I beg you to offer original remarks and thus make up for my shortcomings in simply robbing others' brains in order to bring before your notice "Iodine and its Compounds."

Iodine belongs to a group of non-metallic elements and is either obtained from the mineral iodides and iodates or from kelp—the ashes of seaweed. Like chlorine iodine possesses powerful affinities; it combines readily with many organic and inorganic substances, and is a powerful disinfectant, antiseptic and deodorant. Dr. Lauder Brunton states the most destructive substances to bacteria are corrosive sublimate, chlorine, bromine and iodine.

Iodine when applied externally is a powerful irritant and vesicant; it is seldom used directly as a caustic, but concentrated solutions or liniment are used as stimulants and resolvents in chronic inflammation of joints, synovitis periostitis, bursal enlargements, strains of tendons, thickening of periosteum, bony enlargements (exostoses); scrofulous and other tumours, and in induration of the udder. It is likewise a powerful parasiticide especially efficacious in both tinea tonsurans and tinea circinata (the two forms of ringworm), in the treatment of which Mr. Carter recommends the following formula:—

Iodine ... 2 drams.
Light oil of wood tar 1 ounce.

In the human subject painting the affected and circumjacent skin with a solution of iodine is strongly recommended to prevent the extension of erysipelas. Iodine solution is injected into joints affected with white swelling, into the cavity of the pleura in empyæma and into other internal cavities without producing ill results, unless caries or necrosis of the bones be present, but whether these lines of treatment will ever be likely to be adopted in veterinary practice appears doubtful.

In chronic pleurisy in the human subject after evacuation, iodine injections remove the great fœtor often present from the decomposition of pus.

Solution of iodine injected into the cavities of abscesses or serous cysts, glandular enlargements, etc., is beneficial by retarding their development and assisting their dispersion.

Inhalations of iodine are strongly advised by medical writers in bronchial catarrh and other affections of the lungs and air passages, and might perhaps be more largely applied in the treatment of the lower animals.

Iodine when applied externally is absorbed into the blood partly by the skin and partly by the air of respiration in the form of vapour. In application to glandular enlargements the absorption is stated to be often more effectual when applied in a zone around instead of directly over the swelling. As a stimulant in sore throat and counter-irritant in pleurisy it may be applied as a tincture or aqueous solution, being especially efficacious in arresting the formation of an exudate, and hastening the removal when outpoured.

Solutions of iodine mixed with or alternated with tar, sulphur, and the mercurials prove useful in eczema, psoriasis and the varied forms of skin trouble produced by the presence of parasites—including as before stated ringworm. In the treatment of indolent ulcers and for the stimulation and deodorisation of unhealthy and malignant wounds either an ointment or dilute tincture is of the utmost service.

A useful antiseptic dressing for wounds may be made of—

Iodine
Iodide of potash; each 10 grs.
Water 1 oz.

A useful mange dressing of—

Iodine ½ oz.
Iodide of potash 2 drms.
Tar oz. j.
Lard oz. viii.

Iodine is an expensive but very effectual deodoriser and disinfectant, decomposing, harmful organic compounds chiefly by uniting with their hydrogen, and also destroying the lower forms of vegetable and animal life. It is said to be contra-indicated in high fever, but this can hardly apply invariably, or so much success would not attend its administration in purpura. Hertwig states in most affections of the eyes it does more harm than good. The ointments of the iodide of lead and mercury are considered of much value in the treatment of enlarged lymphatic glands etc., their chief effect being stimulation, but undoubtedly a certain amount of the iodine is absorbed and acts specifically.

Large doses of iodine are irritant and corrosive. Vapour insufficiently diluted causes irritation, cough and spasm of the glottis. Medicinal doses stimulate secreting glands and quicken their capillary circulation and metamorphosis, hence are alterative and deobstruent. Iodine is especially beneficial in the treatment of diabetes insipidus in horses, allaying the thirst and arresting the abnormal flow of urine in an almost miraculous manner. How the marked effect of iodine in diabetes is attained is not well explained, as the only physiological action credited with being capable of exerting a curative influence is the removal of thirst and the antiseptic arrest of excessive tissue metamorphosis; but no other antiseptic or tonic is to be depended upon in such cases. Iodide of potash is not nearly so effectual as the crude iodine, but it is surmised iodine in combination with iron may exert a more direct tonic effect, and I have achieved beneficial results in the administration of liq. calcis iodinatæ.

Iodine possesses the power of causing other substances to be excreted by the saliva when they are combined with it; notably is this the case with iron and quinine. Iodine is excreted in the salivary glands, the saliva containing it is swallowed, iodide again absorbed by the stomach and carried back by the circulation to the salivary glands once more, hence the reason why iodine is so persistently retained in the system. Another being that it becomes combined with the albuminous matters of the blood and tissues, the combination being only slowly broken up. Both saliva and mucus are stimulated to flow by the action of this agent. Iodine and the iodides act upon the lymphatic system and promote absorption; their action being especially marked in cases of glandular enlargement. In their action on the tissues they displace or replace chlorine, but the quantity of urea excreted is but little affected by iodine.

In human surgery the application of tincture of iodine to the gums is said to be beneficial in periosteal toothache, and to arrest the receding action of the gums. This may very probably be found to be the case in canine surgery.

Like chlorine and bromine, iodine is a powerful oxidising and antiseptic agent. It resembles mercury in its alterative properties and in stimulating glands. Its stimulation of the skin and mucous surfaces ally it to sulphur and arsenic.

Iodine decreases the rapidity of the pulse when absorbed into the blood but has little effect upon the blood pressure. It has a *very* slight tendency to raise the temperature; is freely absorbed into the blood from mucous surfaces, and the sodium iodide quickly enters from the alimentary canal. It is eliminated by the urine, nasal mucous membrane, saliva, intestinal mucous, and milk, in all of which it may readily be detected; as it is more readily eliminated by the saliva than the urine it remains a considerable time in the body. It is readily diffused and detected in the various secretions and 5 minutes after administration of a soluble preparation iodine has been found in the urine, whilst the urine of a horse which had one single large dose in bolus afforded indications of iodine for 3 days (Finlay Dunn).

In long-continued doses it may produce atrophy of the mammæ, ovaries and testes.

It has been stated that very large doses affect the nervous system, causing even paralysis of the muscles, but I have failed to find a record of this result in veterinary medical literature; whilst iodism is scarcely, if ever, seen in veterinary practice.

When applied to the unbroken skin it causes a slight warmth, and afterwards a little itching. Stronger applications produce a painful burning sensation and desquamation of the epidermis. In still stronger solutions vesication and abrasion ensue.

When iodine is swallowed contact with the alkaline secretions ensures solution and conversion into albuminate and sodium iodide. Two to three drachms given to dogs was speedily evacuated by vomiting.

Horses and cattle are less susceptible to both the local irritant and general constitutional effects of iodine than the human subject and dog, probably owing to the large quantities of starch in the alimentary canal. Forty to sixty grains (Hertwig) given to horses twice a day for 14 days continuously, caused merely slight diarrhœa with black evacuations and increasing emaciation. As much as 2 oz. daily have been given to horses, and even more to cattle with no untoward results (Finlay Dun). Given in the solid form the iodine would be slowly and perhaps only partially dissolved and absorbed, and during tardy solution must have, in great measure, been neutralised by contact with starchy food.

In *The Veterinary Record*, Vol. VI., No. 307, appears an article on the Treatment of Purpura Hœmorrhagica, by Mr. J. A. W. Dollar, from which one gathers Professor Dieckerhoff, of the Berlin Veterinary School, was the first to advise and use iodine in the treatment of this most fatal disease. The writer goes on to record the history of a *very* bad case treated by another German named Schaumkell, from date of admittance on Jan. 16th, with a temperature of 105 4/5ths F.; respirations 30, and pulse 75 per minute until the 24th of January, when the patient is deemed convalescent. During that period the animal had injected into his trachea 18 drachms of iodine solution (of strength one part iodine, 5 iodide potassium, 100 water) twice a day for first 3 days, then brought down to once a day later to 12 drachms until January 24 when all internal remedies are stopped. This the writer explains is an aggravated case and that Dieckeroff gives but 3 to 9 drachms of the solution twice a day in ordinary cases.

Since this article Mr. Dollar and others have tried the treatment and reported their experiences, and the result is that iodine must henceforth be considered practically a specific for purpura, and few as my cases of the disease are I shall certainly put the treatment to the test.

Morton records an instance of atrophy of the testicles with loss of sensual desire in a bull as a result of the administration of iodine, but doubts are entertained of its effects in arresting the secretion of milk. Moderate doses in properly soluble form produce in the domestic animals well marked results.

Iodine stimulates the secretion of the nasal mucus and saliva and of the pancreatic and biliary fluids; increases tissue metamorphosis and the removal of waste products, and improves the appetite. Various morbid processes are checked, excessive thirst and inordinate secretion of urine are arrested, and glandular enlargements absorbed. Patients taking iodine acquire a tolerance of it.

Iodine is not cumulative. In man it has been given for more than a year without deleterious consequences, and with due cessation of the administration its effects speedily cease. It is given to man as liq. iodi. B.P. in cases of vomiting and might prove a beneficial agent in this disorder in dogs.

Iodine should be administered two hours after eating in order to diminish the proportion otherwise converted into the mild insoluble starch iodide. It is advisedly given for a week or ten days, with-held for one or two, and, if necessary, again resumed.

It is considered more satisfactory (although less convenient) to administer the iodine in water dissolved with a little iodide of potassium, than in a ball, in order to secure a more perfect solution and certain action. The tinctures have no advantage over the watery preparations. For external application.

Iodine	...	1 part.
Iodide of potassium		½ „
Water	...	8 „

may be used pure or diluted according as to whether mild stimulation or strong blistering effect is desired.

Iodine water in strength of 1 in 7000 is said to destroy the spores of bacilli in one day. It is recommended in ozæna, but probably in veterinary practice it would be superseded by iodoform, pure or diluted with quinine and bismuth.

Iodine has been detected in the blood, saliva, and urine, and even in the urine of a sucking child whose mother was taking iodine.

Dr. Huchard claims to have cured 20 cases of angina pectoris with sodium iodide.

As previously stated iodine is freely absorbed into the blood from mucous surfaces, and the sodium iodide quickly enters from the alimentary canal. In the blood the element is first combined with sodium, but this salt appears to be decomposed, iodine temporarily set free, some of the red corpuscles broken down (if the iodine is in large quantity), and bloody effusions and urine ensue —Not recorded in veterinary literature.

The iodide of sodium and albuminous compounds pass very quickly from the blood into the tissues and especially into the secretory organs and lymph glands, but are very scantily noted in the nervous centres. By this liberation of iodine in the tissues it is enabled to leave them again passing rapidly through the protoplasm of the body, and sharing in its metabolism by combining very loosely with the albuminous molecules no doubt. Iodine accelerates tissue change. Iodine is rapidly excreted, part of the sodium salt is thrown out unchanged, part decomposed and iodine again set free to exert its local action remotely. The diuretic action of iodide of potash is believed to be due to the potassium.

It is conjectured iodine either spares the liver (the chief source of urea) or accelerates the metabolism of the plasma rather than the tissue elements themselves, as no increase of urea or bodily wasting accompanies this effect.

In the human subject in addition to the effect of iodine applied externally, and administered in the form of iodide internally, it has a most characteristic effect upon syphilitic affections.

In subacute and chronic inflammations of various kinds such as exudations and effusions in connection with the joints and serous cavities and some forms of pulmonary consolidation, Iodide of potash may promote absorption by stimulating local nutrition; with the internal administration, the external application of iodine being combined. Scrofulous affections in either man or the lower animals, especially when principally confined to the lymphatic glands, are benefitted by the local application of iodine and the internal administration of the iodide of iron. On the other hand phthisis is rarely affected by the iodides. In enlargement of the liver and udder, and in mesenteric disease as well as in anæmia, the iodide of iron is notably serviceable.

In chronic rheumatism in which debility is not a pronounced symptom, and in arthritis, iodine is beneficial.

Potassium and sodium iodides retain the chief properties of iodine, but are less irritant and less active as gland stimulants, but more apt to affect the kidneys.

Bing holds that free iodine and its readily decomposa-

ble compounds are narcotic—paralysing the cerebral centres by direct action on the nervous structures, and finally proving fatal through the respiratory centre.

The heart vessels and body temperature are unaffected by iodine, and the depressing effects on these of iodide of potassium is said to be caused by the potassium.

Iodide of potash is prescribed as an alterative and resolvent in the second stages of inflammation after the acute of symptoms have subsided. It aids the removal of hydrothorax, recent exudations on mucous membranes, and of glandular enlargements.

American practitioners prescribe iodine solutions in combination with small doses of carbolic acid in febrile attacks, particularly when depending upon malaria, and Dr. Anderson considers it a cheap substitute for quinine in these cases, curing ague where quinine has failed.

The iodides of iron, copper, and mercury exhibit mainly the action of their powerful bases.

Professor Williams strongly advocates the internal and external administration of liquor hydriotatis et arsenici in the treatment of psoriasis and, unless my memory serves me badly, the late much beloved and respected Professor Robertson used to speak in equally high terms of its action.

The administration of half a drachm each of iodine, iodide of potassium, camphor and belladonna extract is attended with the best results in the irritable cough, profuse discharge of catarrh, sore throat and bronchitis, (especially of a chronic or epizootic type) amongst horses.

Inhaled diluted with steam or dry air it soothes the irritable respiratory surfaces in horses, arrests mucopurulent discharges and is, by some, recommended in hoose in calves as an agent fatal to the filariæ.

Iodide of potassium is an indirect antispasmodic administered with marked benefit in asthma and emphysema.

Iodide of potassium is said to be remarkably useful in curing and alleviating aneurism in the human subject, by causing a reduction of blood pressure by the alkali, the coagulating effect of the iodine on the blood and the specific effect of iodine on the chronic inflammatory changes in the wall of the artery which have led to the dilatation.

Iodide of potassium is an alterative, deobstruent, antispasmodic and diuretic. As an external application to the unbroken skin it is not nearly as effectual as iodine and other of its compounds, it having been stated that it it inert unless decomposed by the sweat to enable it to become absorbed. Iodide of potassium depends for its action partly on the iodine and partly on the potassium. It is readily absorbed (as are the other alkaline iodides) in internal administration. Iodine is supposed to be set free from the iodide, is taken up again by the albuminous substances and the entrance of the iodine molecule into their composition causes them to undergo more rapid metamorphosis.

In the *Journal of Comparative Pathology and Therapeutics*, Vol. V., Part II, Professor Nocard directs attention to internal administration of iodide of potash in the treatment of actinomycosis in which he gives the most satisfactory accounts (confirmed by many others since) of the result of his experiments. Until quite recently this disease was treated by the local application of soluble phenyl (a compound of iodine and carbolic acid), now this is proved unnecessary and the only untoward result of the new treatment is a peeling of the epidermis with, in some instances, a certain amount of loss of hair.

When administered as an antidote to mercury and lead poisoning the mercury and lead are set free by it from their combination with the tissues, and entering once more into the circulation are eliminated most rapidly by the kidneys, salivary glands, probably by all the mucous membranes and skin.

Arsenic is said to modify the ill effects (Iodism) of iodide of potash and prevent the eruption. The iodides of potash and soda may each be given where iodine is indicated, but these salts are less irritating and have the advantage of being diuretic, hence are especially indicated in ascites and hydro-thorax.

In man large doses are said to irritate the stomach and disorder the digestion. In the blood iodide of potash is converted into the iodides and iodates of ammonium and sodium, and during its elimination ozone is liberated (Bucheine); the lymphatics are stimulated, tissue metamorphosis is increased and waste products got rid of. It has been stated (Maillet, quoted by Tabourin) that 2 or 3 drachms of iodide of potassium given to a horse acted as an irritant poison, and that 3 or 4 caused fatal intestinal hæmorrhage. This must be a fabulous mistake, for as much as from 4 drs. to 1 oz. have been given with no more ill results than slight diuresis and occasional catharsis. These doses given twice a day do not produce in horses any irritation or symptoms of iodism.

No better agent than this can be used in the treatment of lymphangitis in the horse, especially when combined with iron; where any excess of effusion is present the stimulating and antacid effects of ammonia will be found of assistance. In chronic rheumatism it has the advantage over iodine of being diuretic.

Iodoform is described as a local anæsthetic. It is antiseptic and disinfectant, the chief use to which it is applied in veterinary medicine is (by means of the insufflator) in nasal gleet, either pure or diluted with equal parts of quinine and bismuth

Sir Joseph Lister in an address delivered at King's College Hospital on January 18, 1893, says: "It is unquestionably true that iodoform exercises a powerful antiseptic influence upon wounds, but it is a very peculiar antiseptic having extremely little influence over bacteria outside the body: the most probable explanation of this apparent anomaly being that suggested by Behring, viz., that iodoform produces its beneficial effects not by actfng directly upon the bacteria but by inducing chemical changes in their toxic effects, he (Behring) having ascertained as a matter of fact that some of these toxines are altered chemically by iodoform and at the same time rendered harmless.

A most useful method of applying iodoform to wounds is by means of cotton wool impregnated with it or by means of an ointment of the following composition.—

Iodoform	gr. iv.
Ol. Eucalypt.	oz. i.
Vaseline	oz. i.

Ringer highly recommends its use in eczema. It has been tried in a multiplicity of cases internally with little, if any, beneficial results.

Iodal is a similar but non-odorous preparation. The poisonous effects of iodoform noted in horses sometimes are counteracted by hourly 10 grain doses of bicarbonate of potash.

Biniodide of Mercury is almost as irritant as corrosive sublimate. Is very rarely used internally but in the form of ointment is applied as a stimulant, counter-irritant and caustic. It is a very effectual agent in the reduction of bony and ligamentous enlargements, spavin, splints, ringbone, etc., penetrates deeply, arrests chronic inflammation, and develops healthy action in chronic enlargements and indurations of sprained tendons, bursæ, and joints; is applied as a counter-irritant in sore throat when the other blisters have been resisted. Is recommended by some in the early stages of farcy!

For ordinary purposes one part biniodide to eight of lard is generally used, but Mr. Dollar recommends one biniodide and ten vaseline, prepared in a water bath, it

keeping a better colour and sweeter than the other preparation. To avoid damaging the hair follicles, rubbing down a little ext. belladonna with the ungnent is advisable. As a stimulant to the chest walls in pleurisy and pneumonia 1 part biniodide to 16—32 lard is of much advantage. Heat (especially of the sun) often has a marked effect upon its action.

Green iodide of mercury has been described as a useless addition to the pharmacopœia, but in the so-called mal lenders and sallenders at the bends of the knee and hock joints I have seen a marked benefit attend its use.

Iodide of sulphur being non-poisonous makes an excellent mange dressing for the dog.

Iodide of ammonia and sodium would most probably be very efficacious in the treatment of canker of the ear of the dog, as in man it is given internally, and used externally in thickening of the membrane of the ear. Iodide of potassium is also of value in this affection.

Iodide of zinc is used in enlarged tonsils and glandular swellings.

Iodide of iron is a tonic, alterative and astringent. It secures increased number and development of blood globules, improves nutrition, and assists in promoting absorption of solid and fluid exudates. Mr. Morton spoke highly of it in the treatment of polyuria and nasal gleet. The syrup may be used in canine practice.

Iodide of copper resembles in its action that of other copper salts. Is of benefit in œdema of the legs, and as an astringent in ill-conditioned ulcers and inveterate grease. No sufficient proof of its superiority over the sulphate has been given.

Iodide of lead. The iodine is supposed to have a beneficial effect upon the corpuscles of the spleen and the lead to cause contraction by acting upon the involuntary muscular fibres of the organ. The ointment is applied to enlarged glands.

Gentlemen, I have endeavoured to bring the views of others prominently before your notice, and in thanking you for your kind attention must ask you to add to this kindness by a liberal discussion on the subject.

Authorities quoted: Ringer, Mitchell Bruce, Lauder Brunton, Finlay Dun, and others.

Discussion.

Mr. Carter thanked the essayist for his paper. He had not much experience of iodine as an internal remedy but should feel inclined to use it in the future in such cases as recommended by the essayist. He had found strong iodine liniment one of the best dressings for enlarged bursæ, and iodoform a capital dressing for wounds.

Mr. Burden said his experience of iodine was also confined to its use as an external dressing.

Mr. Barford related a case of purpura hemorrhagica which he had recently had under treatment, and the result obtained with the iodine treatment was exceedingly satisfactory.

Mr. Goodall had found iodine and pot. iodide very efficacious in purpura hemorrhagica if persevered with, and had also found tinct. iodine good as a dressing for skin in cases of herpes, but did not believe in it for eczema.

Mr. Simpson congratulated the essayist on the excellence of the paper, and after hearing it read felt that the stock of drugs in one's surgery might be considerably reduced. He emphasised the use of pot. iodide in actinimycosis and iodoform in cases of canker of the dog's ear.

The President had used iodine as a dressing in skin diseases, especially ringworm, also internally in diabetes in canine patients with the best results. He had also found iodoform to be one of the best dressings for wounds in dogs.

Mr. Baker having replied to the several speakers; on the proposition of Mr. Goodall, and seconded by Mr. Simpson, a very cordial vote of thanks was accorded Mr. Baker for his paper.

It was decided to hold the next meeting at Southampton in June.

After votes of thanks to the President and ex-president, the members adjourned to dine together.

The Dinner.

The dinner was served by Mr. Henland in his best style, and all the members stayed to partake.

After dinner the usual loyal toasts were proposed, followed by that of the President of the Royal College of Veterinary Surgeons.

In proposing the toast the Chairman spoke in glowing terms of the manner in which the presidential duties had been carried out during the past nine months, and he felt sure that the dignity of the office had suffered nothing by the conduct of their fellow member who had given so much of his time for the benefit of the profession, and whom he was sure they all felt proud to have amongst them that evening.

Mr. Simpson, in reply, thanked the members for their expression of confidence in him, and in replying to the toast as the President of the R.C.V.S., gave the members some idea of the work to be got through and the time required for its performance. He also related some incidents in his recent interview with the President of the Board of Agriculture, the probable benefits that would accrue to the members of the profession, and concluded by expressing a hope that all the members would this year attend the annual meeting of the R.C.V.S. and stay and support him at the dinner in the evening.

Several songs were sung, and a very convivial evening was spent.

ROYAL VETERINARY COLLEGE V.M.A.

The 227th general meeting of the Society was held in the New Theatre of the College, on Friday March 13th, at 6.30 p.m. Mr. Heelis in the chair. The minutes of the last meeting were read and signed.

Prof. Hobday read a letter from the Secretary of the Walley Memorial Fund acknowledging the contribution of the students, and introduced an animals' thermometer, with several specimens of interest.

The Chairman then called upon Mr. G. H. Kitchin to read his paper.

Mr. Kitchin had chosen as his subject "A few remarks on Town and Country Practice," and treated it in a thoroughly interesting and capable manner.

A discussion ensued which was opened by Mr. Harber and the following gentlemen took part in it:—Professor Hobday, Messrs. Park, Heelis, Walker, Gilby Engel, Miller and Green.

Votes of thanks to the Essayist and Chairman terminated the proceedings.

F. Crowhurst, *Assist. Sec.*

The R.S.P.C.A. and the Jewish Mode of Slaughter.

A case of great interest to the Jewish community came before the Bolton magistrates on Wednesday afternoon, 1st inst. The Society for the Prevention of Cruelty to Animals prosecuted a butcher and his assistants for killing a bullock by cutting its throat and letting it bleed to death. Several prominent butchers and veterinary surgeons testified that that was a humane method of slaughtering animals, and the magistrate, taking the same view, dismissed the case.—*Doily News.*

EXTRACTS AND NOTES.

REPORT ON ANTITOXIN.

The long-expected report on the use of antitoxin in diphtheria at the hospitals of the Metropolitan Asylums Board was issued on Saturday. It is a conjoint report, embodying the results obtained during the year 1895 in all the six hospitals in which cases of diphtheria were treated, and it is jointly signed by the six medical superintendents, who are, therefore, all responsible for the conclusions expressed. The delay in preparing the document has been put to good use. Although bristling with statistical tables, it is concise, lucid, well-arranged, and judicial in tone. These qualities greatly enhance its value and reflect much credit on the compilers. The information is full and adequate, without any taint of the hair-splitting or special pleading which sometimes disfigure statistics of the same kind. The main report is followed by a supplementary one giving the results obtained at the Northern Convalescent Hospital in cases of post-scarlatinal diphtheria that is, diphtheria supervening during convalescence from scarlet fever.

General Statistical Results.

The total number of cases treated with antitoxin was 2,182, of which 615 died, representing a mortality of 28·1 per cent. The drug was not used in all the cases which came under treatment, but, to speak generally, in the severer ones only. Certain exceptions to this rule must be mentioned. For short periods at three of the hospitals and to a considerable extent throughout the year at a fourth all patients admitted were consecutively treated; at one hospital the treatment was suspended altogether for three months, and in a certain number of cases, moribund on admission, it was omitted. The upshot of these variations is that antitoxin was administered in rather more than three-fifths of the total number of cases admitted, and those for the most part representing the severer types of disease. The latter fact is further attested by the relative ages of the patients; the antitoxin cases including the great majority of the young children, on whom the chief stress of mortality falls, while the non-antitoxin cases show a much larger proportion of older patients. The two sets, therefore, are not comparable. A better basis of comparison is obtained by taking the whole of the figures for 1895 and contrasting them with those of 1894, or rather with the first ten months of that year, previous to the introduction of antitoxin. This gives the following result:—

Year.	Cases	Deaths	Mortality per cent.
1894 ...	3042	902	29·6
1895 ...	3529	796	32·5

The reduction in mortality of 7·1 per cent. below that of 1894—the lowest previously recorded in any year—must be fairly attributed to antitoxin, because nothing else was changed in the treatment, the average severity of the disease was about equal in the two years, and the proportion of juvenile, that is unfavourable, patients was somewhat larger in 1895 than in 1894. For the benefit of medical readers it may be added that diphtheria in both years alike means diphtheria as clinically, not bacteriologically, diagnosed. The essential conditions, therefore, were the same in the two periods. Had antitoxin been used in all cases in 1895, instead of in three-fifths only, the comparison would have been more symmetrical, but the numbers are sufficiently large to make it quite valid; and in this connexion it is worth noting that those individual hospitals which made least use of the drug show the highest rate of mortality and the smallest reduction on their previous records. The broad conclusion reached is that in the year 1895 antitoxin saved 250 lives in London.

Laryngeal and Tracheotomy Cases.

These are the severe and dangerous cases in which the larynx is involved in the disease, necessitating in many instances an artificial opening in the windpipe. The following tables show the results in the two years 1894 and 1895:—

Laryngeal Cases.

Year.	Cases.	Deaths.	Mortality per cent.
1894 ...	466	289	62·0
1895 ...	468	196	41·8

Tracheotomy Cases.

1894 ...	261	184	70·4
1895 ...	219	108	49·3

Thus with an equal number of laryngeal cases the rate of mortality in the whole series was reduced by 20·2 per cent., and in tracheotomy cases by 21·1 per cent., while the proportion of laryngeal cases requiring tracheotomy was reduced from 56·0 to 45·3 per cent., from which it appears that antitoxin rendered the greatest service in the most severe class of cases. The results in the tracheotomy class are remarkable. "Rather more than 50 per cent. of children on whom the operation has been performed," says the report, "have been saved since the employment of antitoxin. In one of the hospitals no less than a fraction under 60 per cent. survived, although the recoveries in that hospital in any former year did not exceed 25 per cent., and in the preceding year—namely, 1894—were as low as 10 per cent."

Complications and Ill Effects.

These may be grouped under two heads—(1) increase of normal complications, (2) complications probably caused by antitoxin. The following table gives the percentage of normal complications occurring in 1894 and 1895 respectively:—

	1894.	1895.	Increase.
Albuminuria ...	24·1	41·5	17·4
Nephritis ...	1·2	1·6	0·4
Paralysis ...	13·2	20·7	7·5
Pneumonia, lobar	0·3	0·9	0·6
Do., lobular ...	1·6	2·8	1·2
Relapse of disease ...	0·9	1·4	0·5

An increase is shown in all, but chiefly in albuminuria and paralysis, and it is to be noted that an increase in these two affections also occurred in the cases not treated with antitoxin—namely, from 24·1 to 28·6 and from 13·2 to 16·7 per cent. Apparently, therefore, the drug was not wholly responsible for the result. The report further points out that "if any method of treatment for diphtheria is more efficacious than another in tiding the patient over the acute stage of the disease, it is only to be expected that the comparative incidence of complications among cases so treated would rise." In other words, the very efficacy of the treatment is itself responsible for this drawback. By saving the lives of patients who would otherwise have succumbed at an early stage of the illness it provides so many more subjects liable to subsequent complications. There is undeniable force in the contention, but it is borne out by an examination of the different results obtained in the different hospitals—those which show a larger reduction of mortality show also a greater increase of complications. Still, the fact remains and it ought to be borne in mind. Recovery from diphtheria under the antitoxic treatment does not mean for the individual a diminished liability to the normal complications of the disease. Particular interest

attaches to one of them—namely, nephritis. It will be observed that the increase is wholly insignificant, and on this head the report remarks that "the figures certainly do not warrant the statement that has been made in some quarters that antitoxin frequently leads to renal inflammation; nor have we observed any such connection in the post-mortem room."

The special complications associated with antitoxin stand on a different footing. They are analogous to the drawbacks attending the use of nearly all powerful drugs, including the most valuable known to medicine, such as quinine, iron, opium, and mercury. The following table gives the names and relative frequency of occurrence:—

	No. of cases.	Percentage on total cases.
Rash	1002	45·9
Joint pains	103	4·7
Pyrexia	647	29·6
Abscess at site of injection	52	2·3

The report comments on this table:—

It will be seen that a rash is the most common sequel. . . . It is often accompanied by pyrexia. This secondary fever in some cases persists for several days, and may be unaccompanied by any other obvious symptom; it has the effect of somewhat retarding convalescence, and no doubt in rare instances, in patients whose vitality has been lowered by a severe attack of diphtheria, may act prejudicially if it arise at a time when symptoms of cardiac failure are present. But the risk associated with this secondary pyrexia is very small compared with the benefit which follows the employment of antitoxin in the early acute stages of the disease. . . . The joint-pains are rarely severe They almost invariably pass off in the course of a few days and apparently leave no ill effects. An abscess will occasionally develop at the seat of injection in spite of the greatest care. Considering the large number of injections (5,086) and the septic element which is present in so large a proportion of the severe attacks the number of abscesses is not excessive.

Dosage, &c.

The serum used during the first eight months was supplied by the British Institute of Preventive Medicine, under the direction of Dr. Ruffer; for the remainder of the year it is supplied from the laboratories of the Royal Colleges of Physicians and Surgeons by Dr. Sims Woodhead. No difference was observed either in antitoxic value or clinical behaviour. The use made of it varied considerably at different hospitals. The average dose varied from 14·7 cubic centimetres to 25·0 c.c., the average number of injections from 1·3 to 4·2, and the average amount given to each patient from 23·3 c.c. to 67·6 c.c. in the several hospitals.

"Our knowledge on the point of dosage," says the report, "is at present mainly empirical, but we think the best results may be obtained by giving a dose of 1,000 Behring's immunisation units every 12 hours for the first 24, 36, or 48 hours, according to the gravity of the case." The serum now supplied by Dr. Sims Woodhead is reckoned according to immunisation strength, which is a "far more accurate and reliable method of regulating the dosage" than the old one, which only took volume into account.

Clinical Observations.

The clinical effects which have been observed to follow the administration of antitoxin are:—

1. Diminution of the faucial swelling and of the consequent distress.
2. Lessening or entire cessation of the irritating and offensive discharge from the nose.
3. Limitation of the extension of membrane.
4. Earlier separation of the exudation.
5. Limitation and earlier separation of membrane in laryngeal cases.
6. Improvement in general condition and aspect of patients.
7. Prolongation of life, in cases which terminate fatally, to an extent not obtained with former methods of treatment.

Summary Conclusions.

The report concludes with the following summary:—

The improved results in the diphtheria cases treated during the year 1895, which are indicated by the foregoing statistics and clinical observations, are:—

I. A great reduction in the mortality of cases brought under treatment on the first and second day of illness.

II. The lowering of the combined general mortality to a point below that of any former year.

III. The still more remarkable reduction in the mortality of the laryngeal cases.

IV. The uniform improvement in the results of tracheotomy at each separate hospital.

V. The beneficial effect produced on the clinical course of the disease.

A consideration of the foregoing statistical tables and clinical observations, covering a period of 12 months and embracing a large number of cases, in our opinion sufficiently demonstrates the value of antitoxin in the treatment of diphtheria.

It must be clearly understood, however, that to obtain the largest measure of success with antitoxin it is essential that the patient be brought under its influence at a comparatively early date—if possible not later than the second day of disease. From this time onwards the chance of a successful issue will diminish in proportion to the length of time which has elapsed before treatment is commenced. This, though, doubtless, true of other methods, is of still greater moment in the case of treatment by antitoxin.

Certain secondary effects not infrequently arise as a direct result of the injection of antitoxin in the form in which it has at present to be administered, and, even assuming that the incidence of the normal complications of diphtheria is greater than can be accounted for by the increased number of recoveries, we have no hesitation in expressing the opinion that these drawbacks are insignificant when taken in conjunction with the lessened fatality which has been associated with the use of this remedy.

We are further of the opinion that in antitoxin serum we possess a remedy of distinctly greater value in the treatment of diphtheria than any other with which we are acquainted.—*The Times.*

THE ANTITOXIN TREATMENT.

The Times correspondent at Berlin writes:—

An exceedingly sad case of what at first sight appears to be poisoning by antitoxin occurred in Berlin last week, and in view of the extensive employment of the antitoxin treatment in England it deserves the widest publicity. A maid-servant in the family of Dr. Langerhans, a well-known medical man, had been sent to the hospital on suspicion of suffering from diphtheria, and Dr. Langerhans allowed himself to be persuaded to inject his little son, aged one year and three-quarters, with antitoxin as a precautionary measure. A few minutes after the operation, which the unfortunate father himself performed, the child, which was before in blooming health, was dead.

In view of this deplorable result, the State authorities saw fit to order an official post-mortem examination of the body, which took place on Friday. No positive diagnosis, however, of the cause of death was obtained,

though it was discovered that the organs of the dead child were completely healthy and that the operation of injection had been so skilfully performed that death could not have resulted therefrom. Dr. Langerhans himself is apparently of opinion that the antitoxin was the immediate cause of death. The remainder of the antitoxin used for the dose has been handed to the official analyst for investigation, and until this report is published it is impossible to form any certain judgment. Already in connection with this sad occurrence a controversy has arisen in the Press as to the merits of the antitoxin as a prophylactic. The opinions of the writers naturally differ, but all are agreed that a thorough inquiry into the circumstances of the child's death is indispensable.

AN ABLE ADMINISTRATOR.

In Memoriam.

The late Principal-Veterinary-Surgeon James Collins was born November 14, 1830. He joined the 6th Inniskilling Dragoons, as veterinary surgeon June 23, 1854. He was promoted 1st class veterinary surgeon July 29, 1862; inspecting veterinary-surgeon, Bombay Presidency, October, 1866; appointed staff veterinary surgeon, Curragh Camp, November, 1871; and to Dublin in 1873. He remained in Ireland until 1876, where he specially distinguished himself in dealing with outbreaks of glanders, for which he was highly commended by H.R.H. the Commander-in-Chief, and by General Sir John Michael, the Commander of the Forces in Ireland. He was promoted Principal Veterinary Surgeon of the Army June 28, 1876, and he retired in his fifty-third year on completion of the prescribed seven years' tenure of office. He served in the Crimea with the Inniskilling Dragoons and other corps from July, 1854, until July, 1856, and was present at the battles of Balaclava, Inkerman, and siege of Sabastopol (medal with three clasps and the Turkish medal). He proceeded to India in September, 1858, and served in that country until 1870, where he did excellent work, and after only twelve years' service was promoted to be Staff Veterinary Surgeon of the Bombay Presidency, thus early making his mark.

Immediately on appointment as Principal Veterinary Surgeon he applied for the removal of his office from Woolwich, where it was almost lost, to Headquarters, London, which was eventually granted. As Principal Veterinary Surgeon he, in 1878, started the idea of instituting the Aldershot Veterinary School for the instruction of officers and farrier sergeants and shoeing smiths. It was eventually approved of by the authorities and established, and opened on June 1, 1880, the present Director-General of the Department being the first professor. Principal Veterinary Surgeon Collins drew up a very successful scheme for this school, and the lines laid down by him are still in a great measure in force. He attended the opening of the school and took very great interest in it during the remainder of his term of office, which did not expire until he had seen the institution firmly and successfully established. Long before the Veterinary School was established he had classes formed at Woolwich for the instruction of farrier sergeants and shoeing smiths of the Royal Artillery by veterinary officers at Woolwich.

It may here be observed that the Aldershot Army Veterinary School has proved of the greatest benefit to the Service. One of the first things Principal Veterinary Surgeon Collins did after his appointment was to obtain a new Royal Warrant increasing the pay and pensions of the officers of the Army Veterinary Department, for which they were deeply grateful to him. He then, ever studious of the welfare of others and of the Service, found that several veterinary officers held appointments for an indefinite period at home to the detriment of others, who were therefore obliged to proceed to India after being only a short time at home, a very unjust state of affairs. But as veterinary officers were then permanently gazetted to regiments they could not be moved; however, Principal Veterinary Surgeon Collins was equal to the occasion and submitted an admirable scheme, which was approved and adopted, placing them all in one list, thus forming the Army Veterinary Department. This list enabled him to make a foreign service roster, in which all took their fair turn of service both abroad and at home, and besides this unification removed from veterinary officers the heavy pecuniary charges to which they had been subjected while belonging to corps, besides giving them certain allowances which they did not formerly receive. This unification scheme has proved of the greatest benefit in the working of the department.

In 1878 Principal Veterinary Surgeon Collins was successful in obtaining the extension of the Good Service rewards to the Department, Inspecting Veterinary Surgeon T. P. Gudgin being the first recipient. In 1880 Principal Veterinary Surgeon Collins was successful in obtaining an extra grant per diem to veterinary officers in sole veterinary charge in any colony, and also of extra pay to the chief veterinary officer in the field. In 1880 he also succeeded in obtaining promotions for distinguished service for the department, which had not before been conceded. In 1881 he instituted the annual "Veterinary Statistical Return for the Army," a most valuable publication, which is, of course, still continued. Finding the old veterinary regulations would not meet requirements, especially as regards sanitation, stable management, and the method of dealing with glanders or farcy, and other contagious diseases, he compiled the new edition of 1882, fully dealing with all the above, these regulations being so excellent that they remained in force until 1894, when a new edition appeared, in which they are practically republished. But long before the 1882 edition was published he had issued orders which firmly established the sanitary regulations which are still so successfully in force in the mounted branches of the Army. In 1882 the Companionship of the Bath was first conferred on an officer of the Army Veterinary Department; now the officers of the Army Veterinary Department are on the same footing as all other military officers for decorations. In 1883 he got an increased step of rank to the then so-called inspecting veterinary surgeons, and to the then so called veterinary surgeons, 1st class, after ten years' service in that grade.

The last great boon that Principal-Veterinary-Surgeon Collins conferred on all veterinary officers was in obtaining the right of presentation at Court, which had been before denied them. This was in June, 1883, and he was the first veterinary officer regularly presented. For these services the Good Service reward was at retirement conferred on him by Her Majesty.

From the above it will be seen what great service Principal Veterinary surgeon Collins rendered to his department. He it was who placed it on its present sound basis, and laid down the admirable sanitary principles on which it is still conducted, and who made the task of his successor comparatively easy. He was a man of firm will with great determination, which made him succeed in most of what he undertook. He was a strict disciplinarian, but always willing to give a helping hand to the deserving. He was straightforward and impartial, and he will ever be kindly remembered by those who had the privilege of serving under him.—*Army & Navy Gazette.*

[We have much pleasure in quoting this article and hope next week to explain why no obituary notice was published in *The Record* earlier.—Ed.]

"For a Hors."

A Western veterinarian sent the following to be filled :

Send this by this Boy
Tinker of Asfetty 1 ounc
— Camphor 1 ounc
Cappicom 1——
Lodman 1——
Mix

Anknite 10c

Cloraform 1 ounc

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do not think this is spelt wright
but you will know what it is
it is for a hors. dock —— M. D.

Louisville Medical News.

CORRESPONDENCE.

PUBLIC HEALTH AND VETERINARIANS.

SIR,

Your able leading article on above subject I was pleased to read in Saturday's issue of *The Record*.

It is time that this matter was more fully ventilated and the veterinary profession aroused to the position in which they are being placed. To my mind they have been asleep and not looking after their interests as they ought. The question arises who is to blame? Has not the Council of the Royal College of Veterinary Surgeons something to do with this matter? For the last two or three years what have they been doing to further the interests of the veterinary profession? I am afraid there has been too much time wasted over needless discussion about extending the curriculum of veterinary students, wasting time talking about raising the standard of the veterinary profession, causing young men needless waste of time and money to gain a diploma, who when they obtain it, find that all their hard study has been to a certain extent lost, for veterinary surgeons are not recognised as they ought to be. Duties which ought to be performed by them are now in the hands of, as you very truly put it, gasfitters, clerks, butchers, etc. It is now very evident that medical officers and sanitary inspectors have been looking after their interests. At present there is a Bill before Parliament, viz., the Public Health (Scotland) Bill. In Section 23, *re* Inspection and Destruction of Unsound Meat. It says that any medical officer or sanitary inspector may at all reasonable times enter any premises and inspect and examine :—

(*a*) Any animal intended for the food of man which is exposed for sale, or deposited in any place for the purpose of sale or of preparation for sale.

(*b*) Any article whether solid or liquid intended for the food of man and sold or exposed for sale or deposited in any place for the purpose of sale, or of preparation for sale, the proof that the same was not exposed or deposited for any such purpose, or was not intended for the food of man, resting with the person charged; and if any such animal or article appears to such medical officer or sanitary inspector to be diseased, or unsound, or unwholesome, or unfit for the food of man, he may seize and carry away the same himself, or by an assistant in order to have the same dealt with by a sheriff, magistrate, or justice.

It will be seen by this clause in the Bill that a sanitary inspector is to have power granted to question the opinions of veterinary surgeons which they have at present the audacity to do. It is a well-known fact that give any of these officials law at their back, no matter how ignorant they may be, there is no end to the trouble and inconvenience they will cause, and the insults they will heap upon professional men.

In Section 25 of said Bill, *re* Inspection of dairies and power to prohibit supply of milk. It says, "if the medical officer of any district has evidence that any person in the district is suffering from a dangerous infectious disease, attributable to milk supplied within the district from any dairy situate within or without the district, or that the consumption of milk from such dairy is likely to cause any such infectious disease to any person residing in the district, such medical officer shall, if authorised by an order of a sheriff, magistrate, or justice, having jurisdiction in the place where the dairy is situate, have power to inspect the dairy and if accompanied by a veterinary inspector or some other properly qualified veterinary surgeon, to inspect the animals therein, and if on such inspection the medical officer is of opinion that any such disease is caused from consumption of the milk supplied therefrom, he shall report thereon to the local authority, and his report shall be accompanied by any report furnished to him by the said veterinary inspector or veterinary surgeon."

Relating to this clause of the Bill I believe that a meeting of the medical officers and sanitary inspectors of Scotland was held in Glasgow last week, at which it was proposed to petition Parliament to have the veterinary surgeon excluded from the Bill, and the work to be done (such as examining cow's udders for tuberculosis, etc.) by the medical officers and sanitary inspectors or late joiners, bricklayers, policemen, etc. The poor cow may well exclaim "Oh Lord preserve me from such men, if my fate is to be sealed by them."

When tuberculosis becomes a disease recognised by the Government as contagious and scheduled as such in relation to the meat and milk supply of this country, who will then have the power? If the veterinary profession do not bestir themselver better than they have done in the past, I have no hesitation in saying that it will be the medical officers and sanitary inspectors. However, I hope that in the interest of the rising generation of veterinary surgeons, the gentlemen who are at the head of the profession will see that justice will be done.

I think, seeing our Veterinary Council has been increasing the curriculum of the students, they might have given greater prominence to a very important subject, *i.e.* inspection of meat, and also sanitary science, so that when students receive their diplomas and go out into the world they would be able and thoroughly qualified to undertake all the duties that are required of them, for I consider that the inspection of meat and dairies should entirely be in the hands of veterinary surgeons.

I write not as a novice in this matter, having now been twenty-three years inspector of meat for the Burgh of Paisley, and I can safely say that had the Council of the Royal College of Veterinary surgeons given more attention to this matter in the past, it would have been better to-day for our colleges, and better for the young veterinary surgeons.—Yours respectfully,

ANDREW MCGEOCH, M.R.C.V.S.

[Meat inspection is now included in the final examination of all veterinary students.—ED.]

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Capt. E. E. Martin, Capt. Hayes, Messrs. C. Pack, R. J. Dawson, A. McGeoch, F. Somers, J. L. Miller, P. M. Walker, W. G. Wagstaffe, J. McI. McCall, W. M. Scott, "Sanitary," "Assistant."

Evening Express (Liverpool).

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